

## Abstract

The present invention provides a group III nitride semiconductor substrate with low defect density as well as small warp and a process for producing the same; for instance, the process according to the present invention comprises the following series of steps of: forming a metallic Ti film 63 on a sapphire substrate 61, followed by treatment of nitration to convert it into a TiN film 64 having fine pores; thereafter growing a HVPE-GaN layer 66 thereon; forming voids 65 in the HVPE-GaN layer 66 by means of effects of the metallic Ti film 63 and the TiN film 64; and peeling the sapphire substrate 61 from the region of the voids 65 to remove it therefrom.